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Report on Quadra Island Prospects
Quadra Island, British Columbia

1. SUMMARY AND CONCLUSIONS

Two areas of 8 and 12 claims on Quadra Island, British Columbia display epigenetic copper mineralization in massive, amygdaloidal, flat-lying basic lava flows of Lower Triassic age (Texada Formation ≡ Karmutsen Formation). The Island has several similar small prospects, none of which have proven to be very economic. Chalcocite is the main copper mineral and occurs as fillings in amygdules as well as in fracture healings. Bornite and chalcopyrite are subordinate. Assays from mineralized zones show good copper values (eg. 3-6% Cu), but the mineralization appears to be very local and a background value for copper of 0.02% may be typical.

A second type of mineralization is in the form of narrow (average less than 1 inch), bornite-rich veins in altered, massive flows. This type appears to be very limited in extent.

The disseminated nature of the sulphides and the apparent localization in certain flows does not suggest that an economically feasible open-pit mining operation could exist. There appears to be little possibility that massive sulphides are present. An induced polarization survey might delineate anomalous areas. Much more work is required to determine the potential size and grade of a mineralized area.

2. RECOMMENDATIONS

It is recommended that no work be carried out on the

Quadra Island prospects as they stand to date. A re-evaluation would be desirable once electrical surveys and/or detailed geochemical surveys have been carried out.

3. DESCRIPTION OF PROPERTY

Two ~~areas of interest~~ prospects were examined, one containing 8 claims (Area "A") and the other 12 claims (Area "B"). Area "B" has been recently discovered, while area "A" has been known for years. The claim names in area "B" are Seymour, Security, and Skagit. The approximate location of areas "A" and "B" is shown in Figure 1.

4. LOCATION AND ACCESS

The areas of interest are located on Quadra Island, approximately 120 miles northwest of Vancouver. Quadra Island lies east of Vancouver Island opposite Campbell River and is connected with that community by a regular government ferry service. Upon departing the ferry at Quathiaski Cove on the southwest side of Quadra Island, one travels northward for about 3 miles by paved road, then takes the turn off onto a dirt road towards Heriot Bay and continues on a dirt road northward for approximately 8 miles to area "B" which is situated just north of Morte Lake (see Fig. 1). The area has moderate relief of up to 1500 feet above sea level. Several logging roads exist in the area and thus access is good. The prospect area is close to both Morte Lake and Discovery Passage, so a good water supply would be available.

5. OWNERSHIP

The claims on both areas "A" + "B" are owned jointly by three resident loggers-prospectors of Quadra Island. Their names are Rusty and Stan Beech and Tom Hall. Contact was made with Rusty Beech + Stan Beech who showed me around the property. Further information regarding terms of option etc. would be supplied by Harry Davies P. Geol (Alberta) at Box 1153 Creston, B.C.

6. HISTORY + EXPLORATION TO DATE

Claims surrounding a number of similar copper prospects on Quadra Island have been known since the early 1900's. Only small quantities of high-grade copper ore has been shipped years ago from some of these prospects but generally they are of no great economic significance. A few prospects are at present being mined by leaching.

The mineralization in area B was uncovered during logging operations by the present owners a few years ago. Development consists of a number of shallow blasted trenches, most of which show mineralization. In general, the trenches are less than 5 feet long and less than 2 feet deep. Surface indications are virtually non-existant.

The area was covered by Harry Davies, geologist, for the owners, in 1969 at which time only two minor occurrences of sulphides, were observed. The area has apparently never been explored with electrical surveys or by drilling and there is no evidence that prior work has been done on the claim block. No geochemical surveys are available.

Mineralization in area "A" has been known for years. Development includes a few blasted pits.

7. Regional Geology

Quadra Island is underlain by three main rock types. They are from west to east: basic volcanic rocks of Triassic age, calcareous limestone of Jurassic age, and rocks of the Coast Range Batholith of Cretaceous age (see Fig. 2). The copper prospects on the Island are mainly within the massive basic lavas. These lavas are part of the Texada Formation which is the equivalent of the Karmutsen Formation on Vancouver Island. Karmutsen basalt occurs in pillowed, brecciated or massive flows. They are commonly amygdaloidal. There are many varieties and range from pillow lava near the base, through pillow breccia, to massive flows near the top. Thin (inches) beds of interlava sediments rich in copper and vanadium occur in the middle part of the succession. Intervolcanic limestone members are rare.

The Karmutsen Formation is metamorphosed to a low grade (prehnite - pumpellyite facies). It exhibits mainly gently tilted, broadly undulating sequences, separated by narrow fault zones of fractured rocks.

The Karmutsen Formation on Vancouver Island has a reputation for being copper-rich but as of yet has not produced any economic mineral deposits. Apparently, the metals were available but there has no way of concentrating them.

8. Geology of Property

Areas "A" and "B" are both underlain by massive, amygdaloidal basalt-andesite flows, probably in the middle to upper section of the Karmutsen Formation. The volcanics dip gently southward and southeastward. The rocks vary in colour from light green to dark grey. The flows range in thickness from 10 feet to 15 feet or more. Most are highly amygdaloidal, the cavities being filled with such minerals as quartz, epidote, prehnite & pumpellyite. The rocks are all chloritized to some extent and are cut by stringers of epidote.

9. MINERALIZATION

Area "B"

Chalcocite infilling amygdules in massive, amygdaloidal, basic flow rocks is the predominate copper mineral. Bornite and chalcopyrite are subordinate.

Grab samples were taken from the various test pits as well as from the surrounding host rock and twelve were assayed for copper, molybdenite, and silver, (see Appendix A). Five soil samples were also taken over area "B" (see Appendix B).

Pit #3

Pit #3 is a large surface show, 50 x 100 feet, which consists of a number of small blasted pits. The host rock is a highly amygdaloidal (~20%) basic volcanic flow. Cavities are filled with quartz,

pumpellyite (and prehnite?). Epidote veinlets are abundant, but quartz veins are rare. There is no evidence of shearing. Faults in the area may be indicated by draws.

Malachite ~~and~~ and chalcocite are abundant in the blasted areas only. Chalcocite occurs dominantly as infillings in amygdules and less commonly along minute fracture surfaces. Grab samples taken across Pit #3 returned good copper and silver values (see Appendix A - marked 2543-2547 incl.). The location of samples from Pit #3 ~~is~~ shown in Figure 3.

(cont'd)

Pits #1 and #2

Pits #1 and #2 ~~occur~~ are located in the same rock type as at Pit #3 but mineralization is sparse. The zones are small blasted pits. Assays from a 'fresh' basalt from Pit #2 are shown in Appendix A (marked 2548).

*Four rocks in the area of Pit #3 were assayed for copper, molybdenite and silver. (see Fig. 3 for sample locations, and Appendix A for assay results - marked 1451-1454 incl.). The results show that the fresh rock (marked 1451) is insignificantly mineralized and is taken as a background value for copper (i.e. ~0.02%). Other samples contained visible chalcocite mineralization but returned only small values for copper, molybdenite and silver.

The results from Pit #3 indicate that mineralization is very local.

Pits #15 and #16 are surface showings which have not been trenched. A chip sample from Pit #15 assayed 0.49% Cu (from prospect submittal).

Pits #7 to #14 are apparently all located in the same amygdaloidal lava flow. Mineralyation in Pit #7 consists dominantly of chalcocite infilling of amygdules. Assays of a 10 foot trench sample returned values of 2.02% Cu, and 0.34 oz/ton Ag (Appendix A - marked 2550). On Pit #10, chalcocite and minor amounts of bornite occur as infillings in amygdules and tiny veinlets. A number of chip samples from Pit #10 assayed 2.74% Cu (from prospect submittal).

Mineralyation in Pits #13 and #14 consists mainly of bornite and chalcopyrite filling in vesicles and minor veinlets. No chalcocite was observed. A direct correlation of the amount of sulphides with epidote veining exists. Assays from Pit #13 are shown in Appendix A (marked 2549).

Other pits in the area are of a similar nature. A zone of quartz veining no larger than 2 feet wide was observed in only one place. Weak vein chalcopyrite was the only associated mineralyation.

Geochemical Survey

Five soil samples were taken over area "B" (see Appendix B for results). The sample locations are shown in Figure 3. In general, the soil appears rich in copper. Molybdenum content is insignificant. A detailed geochemical soil and silt survey would be required to further evaluate the potential.

Area "A"

Two types of mineralization occur in area "A." One type is the same as in area "B" (i.e. chalcocite filling in amygdules), and the second type is "high-grade" bornite-rich veins (up to 2 feet in width). The veins average $\frac{1}{4}$" to $\frac{1}{2}$" in width and bear a direct relationship with epidote veining. Limited trenching has uncovered the prospect to date.

EXPLORATION POTENTIAL

Mineralization in both areas "A" + "B" appears to be controlled by the layering of the flows and is certainly epigenetic. The thickness of individual flows is small and thus if a certain flow was well mineralized it would normally be of limited extent. Surface indications being practically non-existent makes prospecting very difficult. The disseminated nature of the sulphides would yield a probable grade of about 2% Cu in mineralized zones. ~~but~~ ~~there~~ There is no apparent potential prospect of a massive nature and ~~there~~ it is very difficult to estimate the potential ~~strike~~ extent of mineralized flows. An induced polarization survey would probably

delineate anomalous zones provided the mineralized lava flows aren't covered by thick accumulations of non-mineralized flows. In this respect, the waste to ore ratio would be very important since an open-pit operation would be the suitable mining method. Overburden is generally less than a few feet. Geochemical surveys may be useful.

SELECTED REFERENCES

Muller, J.E. and Carson, D.J.T. 1970. Geology and Mineral Deposits of Alberni Map-Area, British Columbia (92F). Geol. Surv. Can. Paper 68-50, 52 p.

Carlisle, D. and Susuki, T. 1965. Structure, stratigraphy, and paleontology of an Upper Triassic section on the west coast of British Columbia. Can. Jour. Earth Sci., v. 2, pp. 442-484.

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